

IN THE CLAIMS

1. (previously presented) A nucleic acid which encodes a polypeptide consisting essentially of the amino acid sequences of SEQ ID NO: 20.

2. (previously presented) A nucleic acid sequence, which encodes a polypeptide having at least 95% amino acid identity with the amino acid sequence of SEQ ID NO:20 and retains the same binding affinity to said polypeptide of SEQ ID NO:20.

3. (currently amended) A nucleic acid of claim 1, wherein said nucleic acid consists essentially of SEQ ID NO: ~~20~~58 or a sequence complementary thereto.

4. (currently amended) A nucleic acid, wherein said nucleic acid has at least 95% nucleic acid identity with a nucleic acid of SEQ ID NO:~~20~~58 or a sequence complementary thereto and encodes a polypeptide ~~retains~~retaining the same binding affinity to said polypeptide of SEQ ID No. 20.

5. (previously presented) A nucleic acid, encoding a polypeptide having an amino acid sequence consisting essentially of 40 consecutive amino acids of SEQ ID NO:20.

6. (previously presented) A nucleic acid of claim 1 or claim 5, wherein said nucleic acid encodes a polypeptide having one to three amino acid substitutions, wherein said substitutions are made with equivalent amino acids.

7-11. (cancelled)

12. (previously presented) A recombinant vector comprising a nucleic acid according to claim 1.

13. (previously presented) A recombinant vector comprising a nucleic acid according to claim 2.

14. (previously presented) A recombinant vector comprising a nucleic acid according to claim 3.

15. (previously presented) A recombinant vector comprising a nucleic acid according to claim 4.

16. (previously presented) A recombinant vector comprising

a nucleic acid according to claim 5.

17-19. (cancelled)

20. (previously presented) A cell host transformed with a vector according to any one of claims 12 to 16.

21. (previously presented) A set of two nucleic acids consisting essentially of:

(i) a first nucleic acid encoding a Selected Interacting Domain (SID®) polypeptide according to claim 1; and

(ii) a second nucleic acid encoding a prey polypeptide which binds to the SID® polypeptide defined in i).

22-23. (cancelled)

24. (previously presented) A composition comprising a set of two nucleic acids, encoding polypeptides, consisting essentially of the set SEQ ID NO:132/SEQ ID NO:58.

25. (cancelled)

26. (previously presented) A complex formed between said set of two polypeptides of claim 24.

27. (previously presented) A method for selecting a molecule which inhibits the binding between a set of two polypeptides wherein said method comprises:

a) cultivating a recombinant host cell containing a reporter gene the expression of which is toxic for said recombinant host cell, said host cell being transformed with two vectors wherein:

i) the first vector contains a nucleic acid comprising a polynucleotide encoding a first hybrid polypeptide containing a first polypeptide encoded by a nucleic acid according to any one of claims 1 to 5 and a DNA binding domain;

ii) the second vector contains a nucleic acid comprising a polynucleotide encoding a second hybrid polypeptide containing a second polypeptide which binds with the first

polypeptide and an activating domain capable of activating said toxic reporter gene when the first and the second hybrid polypeptides are interacting;

on a selective medium containing the molecule to be tested and allowing the growth of said recombinant host cell when the toxic reporter gene is not activated; and

b) selecting the molecule which inhibits the growth of the recombinant host cell defined in step a).

28. (previously presented) A method for selecting a molecule which inhibits the binding between a set of two polypeptides wherein said method comprises:

a) cultivating a recombinant host cell containing a reporter gene the expression of which is toxic for said recombinant host cell, said host cell being transformed with two vectors wherein:

i) the first vector contains a nucleic acid comprising a polynucleotide encoding a first hybrid polypeptide containing a first polypeptide encoded by SEQ ID NO: 132 and a DNA binding domain;

ii) the second vector contains a nucleic acid comprising a polynucleotide encoding a second hybrid polypeptide containing a second polypeptide encoded by SEQ ID NO: 58 and an activating domain capable of activating said toxic reporter gene when the first and the second hybrid polypeptides are interacting;

on a selective medium containing the molecule to be tested and allowing the growth of said recombinant host cell when the toxic reporter gene is not activated; and

b) selecting the molecule which inhibits the growth of the recombinant host cell defined in step a).

29. (previously presented) A method for selecting a molecule which inhibits protein-protein interaction of a set of two polypeptides wherein said method comprises the step of:

a) cultivating a recombinant host cell containing a reporter gene the expression of which is toxic for said recombinant host cell, said host cell being transformed with two vectors wherein:

i) the first vector contains a nucleic acid comprising a polynucleotide encoding a first hybrid polypeptide containing a first polypeptide encoded by a nucleic acid according to any one of claims 1 to 5 and the first domain of an enzyme;

ii) the second vector contains a nucleic acid comprising a polynucleotide encoding a second hybrid polypeptide containing a second polypeptide which binds with the first polypeptide and the second part of said enzyme capable of activating said toxic reporter gene when the first and the second hybrid polypeptides are interacting, said interaction recovering the catalytic activity of the enzyme;

on a selective medium containing the molecule to be tested and allowing the growth of said recombinant host cell when the toxic reporter gene is not activated; and

b) selecting the molecule which inhibits the growth of the recombinant host cell defined in step a).

30. (previously presented) A method for selecting a molecule which inhibits protein-protein interaction of a set of two polypeptides wherein said method comprises the step of:

a) cultivating a recombinant host cell containing a reporter gene the expression of which is toxic for said recombinant host cell, said host cell being transformed

with two vectors wherein:

i) the first vector contains a nucleic acid comprising a polynucleotide encoding a first hybrid polypeptide containing a first polypeptide encoded by SEQ ID NO: 132 and the first domain of an enzyme;

ii) the second vector contains a nucleic acid comprising a polynucleotide encoding a second hybrid polypeptide containing a second polypeptide encoded by SEQ ID NO:58 and the second part of said enzyme capable of activating said toxic reporter gene when the first and the second hybrid polypeptides are interacting, said interaction recovering the catalytic activity of the enzyme;

on a selective medium containing the molecule to be tested and allowing the growth of said recombinant host cell when the toxic gene is not activated; and

b) selecting the molecule which inhibits the growth of the recombinant host cell defined in step a).

31-43. (cancelled)

44. (previously presented) A nucleic acid encoding a marker compound comprising a Selected Interacting Domain (SID®) polypeptide encoded by a nucleic acid according to any one of claims 1 to 5; and a detectable molecule bound thereto.

45. (previously presented) A recombinant vector comprising a nucleic acid according to claim 44.

46. (cancelled)

47. (currently amended) AAn isolated recombinant host cell which has been transected with said recombinant vector according to claim 45.

48. (currently amended) AAn isolated recombinant host cell according to claim ~~45~~47 which is of prokaryotic origin.

49. (currently amended): AAn isolated recombinant host cell according to claim ~~45~~47 which is of eukaryotic origin.

50. (currently amended) AAn isolated recombinant host cell according to claim 49 which is a mammalian host cell.

51-61. (cancelled)

62. (previously presented) A composition comprising a polynucleotide encoding a Selected Interacting Domain (SID®) polypeptide according to any one of claims 1 to 5, and a carrier.

63-73. (cancelled)